

ABSTRACT

A way of increasing the dynamic range of a mass spectrometer which incorporates a time to digital converter such as commonly used with a time of flight mass analyser is disclosed. A z-lens upstream of the analyser can be switched
5 between a high sensitivity mode wherein a beam of ions passing therethrough is substantially focused on to the entrance slit of the analyser, and a low sensitivity mode wherein the beam of ions is defocused so that the diameter of the beam substantially exceeds that of the entrance slit of the analyser. Obtaining data in the low sensitivity mode in combination with obtaining data in the high sensitivity mode
10 enable an order of magnitude increase in the dynamic range to be obtained.